Some Schools Examinations on Algebra and Statistics

1 Cairo Governorate

Nozha Directorate of Education
Nozha Language Schools

Answer the following questions :

1 Choose the correct answer :

[1] The degree of the algebraic term $5\,x\,y^2$ is .....

(a) zero (b) 2 (c) 3 (d) 5

[2] The number $\frac{x+3}{x-5}$ equals zero if $x =$ .....

(a) -3 (b) 3 (c) 5 (d) -5

[3] The multiplicative inverse of $\left(\frac{2}{5}\right)^0$ is .....

(a) 1 (b) -1 (c) $-\frac{2}{5}$ (d) $\frac{-5}{2}$

[4] The mode of the numbers : 5 , 8 , 4 , 9 and 8 is .....

(a) 9 (b) 4 (c) 8 (d) 5

[5] The H.C.F. of $12\,x^3 + 6\,x^2$ is .....

(a) 6 (b) $6\,x^2$ (c) x^2 (d) $3\,x^2$

2 Complete :

[1] $(x - y)(x + y) =$ .....

[2] $(3x + 5)^2 =$ ..... $+ 30\,x +$ .....

[3] The arithmetic mean of the values : 5 , 4 , 8 , 3 , 10 is .....

[4] $(3x -$ .....$)^2 =$ ..... $- 12\,x + 4$

[5] The number that lies half way between $\frac{2}{7}$ and $\frac{6}{7}$ is .....

3 [a] [1] **Add :** $5a - 2b + 4c$ **and** $4b - 3a + c$

[2] **Subtract :** $2x^2 + 5xy - y^2$ **from** $(2x + y)^2$

[b] **Factorize by using the H.C.F :** $4x^2y^3 - 2xy^2 + 6x^3y$

4 [a] **Divide :** $x^2 - 5x + 6$ **by** $x - 2$ (where $x \neq 2$)

[b] **Use the distribution property to find :** $\frac{5}{9} \times 4 + \frac{5}{9} \times 6 - \frac{5}{9}$

5 [a] **Simplify :** $(x - y)(x + y) - (x - y)^2$ **, then calculate the numerical value of the result when** $x = 2$, $y = -1$

[b] **Find the mean and the median of the values :** 20 , 15 , 25 , 10 , 30 , 7

2 Cairo Governorate

Rod El-Farag Educational Zone
St. Mary's School

Answer the following questions :

1 Choose the correct answer :

[1] If the arithmetic mean of the numbers : 5 , 8 , 7 , k , 9 , 3 is 6 , then k = ...

(a) 3 (b) 4 (c) 5 (d) 6

[2] The multiplicative inverse of the number $\frac{3}{4}$ is .....

(a) $\frac{4}{3}$ (b) $-\frac{3}{4}$ (c) $-\frac{4}{3}$ (d) 1

[3] If $(x-6)(x+6) = x^2 + k$, then k = ...

(a) – 10 (b) 36 (c) 10 (d) – 36

[4] If the order of the median of a set of values is the fourth, then the number of these values equals .....

(a) 3 (b) 5 (c) 7 (d) 9

[5] The rational number that lies on third of the way between 8 and 12 from the smaller is .....

(a) $8\frac{1}{3}$ (b) 10 (c) $9\frac{1}{3}$ (d) $10\frac{2}{3}$

[6] $|-3|+|-5|$ = ...

(a) 2 (b) – 2 (c) 8 (d) – 8

2 Complete :

[1] The algebraic term $6xy^3$ whose degree is .....

[2] The mode of the values : 3 , 3 , 5 , 4 , 4 , 3 is .....

[3] $(2x-3)(4x+5)$ = ... + ... – .....

[4] 1 , 4 , 9 , 16 , ... , ... (in the same pattern)

[5] The number $\frac{5}{x-4}$ is rational if $x \neq$ .....

3 [a] Subtract : $3x^2 - 5xy + 6y^2$ from $2x^2 - 4xy - 2y^2$

[b] Find the quotient : $2x^3 + 11x^2 + 12x - 9$ by $x + 3$ where $x \neq -3$

4 [a] Find three rational numbers between : $\frac{1}{2}$ and $\frac{2}{3}$

[b] Simplify to the simplest form : $(2x-3)(2x+3) + 7$, and calculate the numerical value of the result when $x = 1$

5 **[a] Use the distribution property to find the value of :** $\frac{7}{9} \times 14 + \frac{7}{9} \times 6 - \frac{7}{9} \times 2$

(without using the calculator)

[b] This table shows a pupil's marks of mathematics in five months :

Month	Oct.	Nov.	Dec.	Feb.	March
Marks	40	30	55	45	35

Find : [1] The arithmetic mean of the marks.

[2] The median of the marks.

3 Cairo Governorate

Maadi Zone
Degla Valley Language School

Answer the following questions :

1 **Choose the correct answer :**

[1] The arithmetic mean of the numbers : 3 , 6 , 1 , 6 is .....

(a) 4 (b) 3 (c) 6 (d) 18

[2] The mode of the values : 4 , 5 , 4 , 3 , 4 is .....

(a) 3 (b) 4 (c) 5 (d) 4.5

[3] The degree of the algebraic expression : $5x^3 + 2x^2 - 7$ is the .....

(a) fifth. (b) third. (c) first. (d) second.

[4] If $\frac{x}{y} = \frac{2}{3}$, then $\frac{3x}{2y} =$ .....

(a) $\frac{1}{5}$ (b) $\frac{3}{2}$ (c) $\frac{9}{4}$ (d) 1

[5] If $\frac{x+3}{x-7} = 0$, then the value of x is .....

(a) 3 (b) -7 (c) -3 (d) 7

[6] The median of the values : 2 , 1 , 6 , 5 , 7 is .....

(a) 2 (b) 6 (c) 5 (d) 7

2 **Complete :**

[1] $\frac{3}{4} =$ ..... %

[2] $(x - 5)(x + 5) =$ .....

[3] $12x^2y^3 \div 4xy =$ .....

[4] The remainder of subtracting $-7x^2$ from $2x^2$ is .....

[5] The rational number that lies at half the way between : $\frac{1}{4}$ and $\frac{1}{2}$ is .....

3 **[a]** If $x = \frac{3}{4}$, $y = \frac{-5}{2}$, **find in the simplest form the value of :** $(x - y) \div (x + y)$

[b] Add : $3x^2 + 2x - 5$ **and** $2x^2 - 5x + 3$

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4 **[a] Divide :** $\frac{10x^5 - 6x^3 + 4x^2}{2x^2}$

[b] Use the distribution property to find the value of : $\frac{3}{7} \times \frac{5}{6} + \frac{3}{7} \times \frac{7}{6} - \frac{3}{7}$

[c] Complete : $3x^2 - 6xy = 3x$ (.....)

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5 **[a] Simplify :** $(2a - 3)(2a + 3) + 7$

[b] Write three rational numbers between : $\frac{1}{3}$ **and** $\frac{5}{6}$

[c] Find the mean of the values : 2 , 5 , 3 , 6 , 9

4 Giza Governorate

Al-Agoza Directorate
Supervision of Math

Answer the following questions :

1 **Choose the correct answer :**

1 If $\frac{3}{x-5}$ is a rational number , then $x \neq$ .....

(a) zero (b) 3 (c) -5 (d) 5

2 The algebraic term $2x^2y$ is of the ..... degree.

(a) first (b) second (c) third (d) fourth

3 If $5a = 45$, $ab = 1$, then $b =$ .....

(a) $\frac{1}{9}$ (b) 5 (c) $\frac{1}{5}$ (d) 9

4 Fifth the number $5^{10} =$ .....

(a) 5^9 (b) 5^5 (c) 5^{11} (d) 3^9

5 The value of the digit 7 in the number 0.4753 is .....

(a) $\frac{7}{10}$ (b) $\frac{7}{100}$ (c) $\frac{7}{1000}$ (d) 7

6 The mode of the values : 5 , 7 , 3 , 5 is .....

(a) 5 (b) 7 (c) 3 (d) 4

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2 **Complete :**

1 $(2a - 3b)(a + 5b) = 2a^2 +$ ..... $-$ .....

2 If three times a number is 15 , then fifth this number is .....

3 The number which lies at half the distance between : $\frac{1}{2}$ and $\frac{3}{4}$ is .....

4 $5\ a^2$ increases $-3\ a^2$ by .....

5 The median of the values : 4 , 8 , 3 , 5 , 7 is .....

3 [a] Use the distribution property to get the result of : $\frac{3}{5} \times 2 + \frac{3}{5} \times 6 - \frac{3}{5} \times 3$

[b] Simplify : $(2x - 3)(2x + 3) + 7$

4 [a] Find two rational numbers between : $\frac{1}{3}$ and $\frac{1}{2}$

[b] What is the increase of : $7x + 5y + z$ than $2x + 6y + z$?

5 [a] Factorize by taking out the H.C.F. : $18x^2y^3 + 6x^3y^2 - 3x^2y^2$

[b] If the arithmetic mean of the values : 8 , 7 , 5 , 9 , 4 , 3 , k + 4 is 6 , find the value of : k

5 Giza Governorate

Omraniia Directorate
El-Sadat Governmental Language School

Answer the following questions :

1 **Choose the correct answer :**

1 The algebraic term $7xy^3$ whose degree is .....

(a) 1 (b) 2 (c) 3 (d) 4

2 The remainder of subtracting $3x$ from $5x$ is .....

(a) $2x$ (b) $-2x$ (c) $8x$ (d) $2x^2$

3 The median of the values : 4 , 8 , 3 , 5 and 7 is .....

(a) 3 (b) 4 (c) 5 (d) 7

4 If $\frac{a}{b} = 1$, then $5a - 5b =$ .....

(a) zero (b) 1 (c) 3 (d) 5

5 The mode of the values : 7 , 3 , 7 , 2 and 7 is .....

(a) 3 (b) 7 (c) 2 (d) 5

6 If $\frac{15}{x} = \frac{3}{4}$, then $x =$ .....

(a) 20 (b) -20 (c) 5 (d) -5

2 **Complete each of the following :**

1 The multiplicative inverse of $\frac{-7}{5}$ is .....

2 The additive identity element in $\mathbb{Q}$ is .....

3 The mean of the numbers : 6 , 4 , 1 , 5 and 9 is .....

4 If $\frac{x+3}{x-2} \in \mathbb{Q}$, then $x \neq$ .....

5 The rational number in half way between : $\frac{1}{7}$ and $\frac{5}{7}$ is .....

3 [a] Add : $5x^2 - 7xy + 4y^2$ and $4x^2 + 5xy - 9y^2$

[b] Use the distribution property to find : $\frac{8}{13} \times 11 + \frac{8}{13} \times 9 + \frac{8}{13} \times 6$

4 [a] Simplify : $(x-5)(x+5) + 25$, then find the value of the result if $x = 3$

[b] Find three rational numbers between : $\frac{1}{3}$ and $\frac{1}{2}$

5 [a] Factorize by taking out the H.C.F. : $27x^3y^2 - 9x^2y^3 + 3xy$

[b] The following table shows the distribution of marks of 20 students in an exam :

Marks	7	8	9	10	Total
No. of students	5	9	4	2	20

Find the mode of these marks.

6 Alexandria Governorate

Middle Educational Zone
Math's Supervision

Answer the following questions :

1 Complete each of the following :

1 If $\frac{4}{6} = \frac{12}{x}$, then $x + 2 =$ .....

2 The multiplicative inverse of $-\frac{2}{3}$ is .....

3 $\frac{1}{2} =$ ..... %

4 The rational number in half way between $\frac{3}{5}$ and $\frac{4}{5}$ is .....

5 If $a + 3b = 7$, and $c = 3$, then the numerical value of : $a + 3(b + c)$ is .....

6 The arithmetic mean of the set of values : 2 , 3 , 8 , 2 , 5 equals .....

2 Choose the correct answer :

1 0.0635 ≃ ..... to the nearest hundredth.

(a) 0.63 (b) 0.07 (c) 0.06 (d) 0.063

2 $0.7 + 0.\dot{3} =$ .....

(a) 1 (b) 3.7 (c) $0.\dot{3}7$ (d) $1\frac{1}{30}$

3 If the order of the median of a set of values is the fourteenth , then the number of these values equals .....

(a) 27 (b) 15 (c) 7 (d) 28

4 $(4x-3)(x-4) =$ .....

(a) $4x^2-19x-12$ (b) $4x^2-7$ (c) $4x^2-12$ (d) $4x^2-19x+12$

5 The mode of the values : 3 , 3 , 4 , 4 , 5 , 3 is .....

(a) 4 (b) 22 (c) 5 (d) 3

3 **[a] Multiply : $(2x+y)(x+2y)$, then find the numerical value at : $x=2$, $y=1$**

[b] Use the distribution property to find : $\frac{7}{12}\times\frac{23}{45}+\frac{17}{12}\times\frac{23}{45}-2\times\frac{23}{45}$

4 **[a] Divide : $x^3y-4xy^2+6xy+x^2y^2$ by xy**

[b] Find three rational numbers between : $\frac{4}{5}$ and $\frac{2}{3}$

5 **[a] Subtract : $5x^2+y^2-3xy$ from $x^2-2xy+3y^2$**

[b] The following table shows the marks of Alaa in maths tests in 6 months :

Month	Oct.	Nov.	Dec.	Feb.	March	April
Mark	41	35	47	37	44	48

Find : 1 The median for the previous marks. 2 The mean for the previous marks.

7 Alexandria Governorate

El-Montaza Educational Zone
Math's Supervision

Answer the following questions :

1 Choose the correct answer :

1 The additive inverse of the number $\left(\frac{-1}{5}\right)^0$ is .....

(a) 1 (b) -1 (c) 5 (d) $\frac{1}{5}$

2 The degree of the algebraic expression : $3x^2+5xy^2+6y^2$ is .....

(a) zero (b) second (c) third (d) fourth

3 If $\frac{x}{y}=1$, then $3x-3y=$ .....

(a) zero (b) 1 (c) 3 (d) 6

4 If the arithmetic mean of six values is 12 , then the sum of these values equals .....

(a) 2 (b) 6 (c) 18 (d) 72

5 The rational number that lies at the midpoint of the distance between $\frac{1}{4}$ and $\frac{1}{3}$ is .....

(a) $\frac{1}{12}$ (b) $\frac{7}{12}$ (c) $\frac{3}{4}$ (d) $\frac{7}{24}$

6 The length of a rectangle is $2x$ cm. and its width is y cm. , then its perimeter = ...

(a) $2xy$ (b) $3xy$ (c) $2x+y$ (d) $4x+2y$

2 **Complete :**

1. $2x^3 \times 3xy =$ .....
2. $2\frac{1}{5} \times$ ..... $= 1$
3. The remainder of subtracting $(-3x)$ from $(2x)$ is .....
4. If the mode of the values : 7 , 5 , a + 3 , 5 , 7 is 7 , then a = ...
5. The median of the values : 5 , 9 , 7 , 4 , 3 , 8 is .....

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3 **[a] Use the distribution property to find the value of :** $\frac{5}{17} \times 10 + \frac{5}{17} \times 23 + \frac{5}{17}$

[b] Add : $2a - 3b + 5c$ **and** $3a + b - 5c$

[c] Divide : $6x^2y^2 + 9x^2y^3$ **by** $6x^2y^2$ $\quad (x \neq 0 , y \neq 0)$

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4 **[a] If** $a + b = \frac{5}{4}$ **and** $b + c = \frac{3}{4}$ **, find the value of :** $a + 2b + c$

[b] From : $5x^2 + 4x - 3$ **subtract :** $4x^2 - 5x + 3$

[c] Simplify : $(x - 1)^2 + (x + 3)(x - 3)$

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5 **[a] Factorize :** $12a^2b + 18a^3b^2$

[b] If $a^2 = 25$, $b^2 = 9$ **and** $ab = 15$ **, then find the value of :** $(a - b)^2$

[c] If the arithmetic mean of the values : 3 , 5 and $x + 2$ **is 4 , then find the arithmetic mean of the two values :** $5 - x$, $5 + 2x$

[d] If the set of ages of pupils in one school is as follows :
$\{7 , 9 , 13 , 6 , 8 , 12 , 10 , 14 , 11\}$ **, find the median age of this set.**

8 El-Kalyoubia Governorate

Directorate of Education
Math Supervision

Answer the following questions :

1 **Choose the correct answer :**

1. $|-5| - |2| =$ .....
   (a) 3 (b) – 7 (c) 10 (d) – 3
2. If the arithmetic mean for the numbers 3 , 5 , x is 4 , then $x =$ .....
   (a) 3 (b) 4 (c) 5 (d) 6
3. The remainder of subtracting $9x$ from $7x$ equals .....
   (a) $2x$ (b) $-2x$ (c) $16x$ (d) – 2
4. If 6 , 5 , 12 and x are proportional numbers , then $x =$ .....
   (a) 8 (b) 10 (c) 5 (d) 7

5 The algebraic term $3x^2y$ is of the ..... degree.

(a) third (b) fourth (c) fifth (d) sixth

6 If the mode of the values : $7, 5, x+4, 5, 7$ is 5 , then $x =$ .....

(a) 1 (b) 4 (c) 5 (d) 7

2 Complete each of the following :

1 $5x^2 + 15xy = 5x$ (..... + ...)

2 12 % of 500 kg. = ... kg.

3 The median of the values : 4 , 8 , 3 , 5 , 7 is .....

4 The rational number which hasn't a multiplicative inverse is .....

5 The rational number that lies one third of the way between 8 and 12 from the smaller number is .....

3 [a] Find three rational numbers that lie between : $\frac{1}{2}$ and $\frac{1}{3}$

[b] Simplify to the simplest form : $(x+5)^2 + (x+2)(x-2)$

4 [a] 1 Subtract : $5x^2 + y^2 - 3xy - 1$ from $6x^2 - 2xy + 3y^2$

2 Divide : $x^2 - 5x + 6$ by $x - 3$ (where $x \neq 3$)

[b] If $a = \frac{3}{4}$, $b = -\frac{5}{2}$, find in the simplest form the numerical value of : $\frac{a+b}{a-b}$

5 [a] The length of a rectangle is $4x$ cm. and its width is $3x$ cm. calculate its area.

[b] The following table shows Gehad's marks in mathematics exam in 6 months :

Month	October	November	December	February	March	April
Mark	20	25	42	27	40	50

Find the arithmetic mean of the marks.

9 El-Gharbia Governorate

East-Tanta Educational Directorate
Al-Salam Language School

Answer the following questions :

1 Complete each of the following :

1 $\frac{3}{4} + 50\% =$ .....

2 $\frac{4}{5} =$ ..... %

3 The additive inverse of the number $|-\frac{2}{3}|$ is .....

4 The most repeated value of a set of values is called .....

5 The smallest natural number is .....

6 If the arithmetic mean of the values : 8 , x , 7 , 5 is 6 , then x = ...

2 Choose the correct answer :

1 The number $\frac{5}{3}$ > .....

(a) $\frac{10}{3}$ (b) $\frac{25}{9}$ (c) $\frac{10}{6}$ (d) $\frac{3}{5}$

2 If 3 a = 27 and a b = 1 , then b = ...

(a) $\frac{1}{9}$ (b) $\frac{1}{5}$ (c) 5 (d) 9

3 The coefficient of the algebraic term $-5x^2y$ is .....

(a) 5 (b) – 5 (c) 3 (d) – 3

4 The median of the values : 11 , 18 , 7 , 10 , 21 is .....

(a) 10 (b) 11 (c) 7 (d) 21

5 The H.C.F. of : $10x^2 + 5x$ is .....

(a) $2x$ (b) $5x$ (c) 5 (d) x

3 [a] Add : $2a - 3b + 5c$ and $3a + b - 5c$

[b] Divide : $x^2 + 6x + 5$ by $x + 5$ (where $x \neq -5$)

4 [a] Use the property of distribution to find the value of :

$\frac{6}{37} \times 7 + \frac{6}{37} \times 5 + \frac{6}{37} \times (-11)$

[b] Factorize by identifying the H.C.F. : $27x^4 - 18x^3$

5 [a] Add : $2x + y + 5$ and $3x + 2y - 1$

[b] 1 Find the mode of : 2 , 4 , 7 , 4 , 5

2 Find the median of : 4 , 8 , 3 , 5 , 7

10 El-Dakahlia Governorate

Math's Supervision

Answer the following questions :

1 Choose the correct answer :

1 If $a \times \frac{b}{3} = \frac{a}{3}$, then b = ...

(a) $\frac{a}{3}$ (b) 0 (c) a (d) 1

2 If the mode of the values : 7 , 5 , y + 3 , 5 and 7 is 7 , then y = ...

(a) 3 (b) 4 (c) 5 (d) 7

3 The algebraic term $2^2 x^3 y^2$ is of the ..... degree.

(a) third (b) fourth (c) fifth (d) seventh

4 $(15 x^4 + 5 x^3) \div 5 x^3 =$ .....

(a) $3 x^2 + x$ (b) $5 x^2 + 1$ (c) $3 x + 1$ (d) $4 x^4$

5 The rational number that lies in half way between $\frac{1}{3}$ and $\frac{5}{9}$ is .....

(a) $\frac{2}{3}$ (b) $\frac{3}{4}$ (c) $\frac{4}{9}$ (d) $\frac{5}{27}$

6 The additive inverse of the number $\left(\frac{1}{2}\right)^{\text{zero}}$ is .....

(a) 2 (b) – 1 (c) 1 (d) – 2

2 Complete each of the following :

1 The order of the median for the values : 4 , 8 , 7 , 5 , 3 is .....

2 0.18 – 30 % = ...

3 If $(2x + y)^2 = 4x^2 + k xy + y^2$, then k = ...

4 If $\frac{5}{a+2}$ is a rational number , then a ≠ .....

5 The arithmetic [illegible] for the values : 18 , 35 , 24 , 7 is .....

3 [a] Use the distribution property to find the value of :

$$\frac{7}{12} \times \frac{23}{45} + \frac{17}{12} \times \frac{23}{45} - 2 \times \frac{23}{45}$$

[b] Subtract : $(-x^2 - 4x + 7)$ from $(3x^2 - 4x - 2)$

4 [a] Factorize by identifying the H.C.F. : 3 a (4 a + 5 b) – 2 b (4 a + 5 b)

[b] Find three rational numbers between : $\frac{4}{5}$ and $\frac{2}{3}$

5 [a] Simplify to the simplest form : (y – 3) (y + 3) + 9

[b] The following [illegible] shows a student's marks of mathematics in [illegible] months :

Month	Oct.	Nov.	Dec.	Feb.	March	April
Mark	41	35	47	37	44	[illegible]

Find : 1 The median for the previous marks.

2 The mean for the previous marks.

11 Suez Governorate

Directorate of Education
Mathematics Inspectorate

Answer the following questions :

1 Choose the correct answer :

1 The multiplicative inverse of $\left(\frac{1}{2}\right)^0$ is .....

(a) 2 (b) – 2 (c) 1 (d) – 1

2 The degree of the algebraic term $6\,x^3\,y^2$ is ..... degree.

(a) third (b) fourth (c) fifth (d) sixth

3 $2\,a\,b^2 \div$ [illegible] = ...

(a) undefined. (b) zero. (c) a b (d) $2\,a\,b^2$

4 If the mode of the values : 7 , 5 , $x+4$, 5 , 7 is 5 , then x = ...

(a) 7 (b) 4 (c) 5 (d) 1

5 If $\frac{5}{x+2}$ is a rational number , then $x \neq$ .....

(a) – 2 (b) 0 (c) 2 (d) 5

6 The number that lies half way between $\frac{1}{3}$ and $\frac{5}{9}$ is .....

(a) $\frac{2}{3}$ (b) $\frac{3}{4}$ (c) $\frac{4}{9}$ (d) $\frac{5}{27}$

2 Complete :

1 $2\frac{1}{5} \times$ ..... = 1

2 If the order of the median of the values is fourteenth , then the number of these values is .....

3 The result of subtracting $-7x$ from $2x$ is .....

4 $(2x-3)(x+5) = 2x^2 +$ ..... – 15

5 The arithmetic mean of the values : 1 , 6 , 8 , 4 , 6 is .....

3 [a] By using the distribution property , find the value of : $\frac{3}{7} \times 2 + \frac{3}{7} \times 6 - \frac{3}{7}$

[b] Find three rational numbers between : $\frac{1}{2}$ and $\frac{1}{3}$

4 [a] Find the quotient : $2x^2 + 13x + 15$ by $x+5$

[b] Simplify to its simplest form : $(x+3)(x-3)+9$, then find the numerical value at $x=5$

5 [a] What is the increase of : $7x + 5y + 1$ than $2x + 6y + 7$?

[b] Factorize by taking out the H.C.F : $12\,a^2\,b + 18\,a^3\,b^2$

12 Port Said Governorate

East Educational Administration
Math Orientation

Answer the following questions :

1 Complete each of the following :

1 $24\,x^4\,y^6 = 6\,x^2\,y^3 \times$ .....

2 The remainder of subtracting $-3\,x$ from $2\,x$ is .....

3 1 , 1 , 2 , 3 , 5 , 8 , ... (in the same pattern).

4 If the mode of the values : 7 , 5 , a + 3 , 5 , 7 is 7 , then a = ...

5 $5\,x^2 + 15\,x\,y = 5\,x$ (..... + ...)

2 Choose the correct answer from those given :

1 The algebraic term $8\,x^3\,y^2$ is of the ..... degree.

(a) third (b) fourth (c) fifth (d) sixth

2 The rational number that lies in half way between $\frac{1}{3}$ and $\frac{5}{9}$ is .....

(a) $\frac{2}{3}$ (b) $\frac{3}{4}$ (c) $\frac{4}{9}$ (d) $\frac{5}{27}$

3 The multiplicative inverse of the number $\left(\frac{1}{2}\right)^{\text{zero}}$ is .....

(a) 2 (b) -2 (c) 1 (d) -1

4 If $\frac{5}{x+2}$ is a rational number , then $x \neq$ .....

(a) -2 (b) zero (c) 2 (d) 5

5 The median of the values : 5 , 4 , 7 is .....

(a) 4 (b) 5 (c) 7 (d) 16

6 If the arithmetic mean for the set of values : 3 , 5 , $x + 2$ is 4

, then the arithmetic mean for the two values : $5 - x$, $5 + 2\,x$ is .....

(a) 6 (b) 4 (c) 3 (d) 2

3 [a] Use the distribution property to find the value of : $\frac{3}{7} \times 2 + \frac{3}{7} \times 6 - \frac{3}{7}$

[b] Find three rational numbers that lie between : $\frac{1}{2}$ and $\frac{1}{3}$

4 [a] What is the increase of : $7\,x + 5\,y + z$ than $2\,x + 6\,y + z$?

[b] Divide : $14\,x^2\,y - 35\,x\,y^2 + 7\,x\,y$ by $7\,x\,y$, $x \neq$ zero , $y \neq$ zero

5 [a] Simplify to the simplest form : $(x - 3)(x + 3) + 9$

[b] The following table shows Gehad's marks of mathematics in 6 months :

Month	October	November	December	February	March	April
Mark	30	35	42	37	44	50

Find the arithmetic mean of the marks.

13 Kafr El-Sheikh Governorate

Mathematics Inspectorate
Language Schools

Answer the following questions :

1 Choose the correct answer :

1 The median of the values : 7 , 3 , 4 , 5 , 2 is .....

(a) 7 (b) 5 (c) 4 (d) 3

2 The rational number $\frac{x-7}{x+3}$ = zero , when .....

(a) $x = -3$ (b) $x = 7$ (c) $x \neq 3$ (d) $x \neq 7$

3 The quotient of dividing $2.25 \div 1.5$ = ...

(a) 1.5 (b) 15 (c) 0.15 (d) 500

4 The arithmetic mean of the numbers : 3 , 9 , 1 , 7 is .....

(a) 20 (b) 5 (c) 4 (d) 3

5 $(x^2 + x) \div x$ = ...

(a) zero (b) x (c) $2x + 1$ (d) $x + 1$

6 $\left|\frac{-5}{3}\right|$ ..... zero.

(a) < (b) = (c) > (d) ≤

2 Complete :

1 $6b^3 = 2b \times$ .....

2 The mode of the values : 7 , 5 , a + 4 , 5 , 7 is 7 , then a = ...

3 The additive inverse of $\left[4 \times \left(-1\ \frac{1}{4}\right)\right]$ is .....

4 The degree of the algebraic term : $3^2 x^2 y^2$ is .....

5 The rational number that hasn't a multiplicative inverse is .....

3 [a] Subtract : $5x^2 + y^2 - 3xy$ from $x^2 - 2xy + 3y^2$

[b] Use the distribution property to find : $\frac{5}{7} \times 5 + \frac{5}{7} \times 10 - \frac{5}{7}$

[c] Simplify : $(2x + 3)(2x - 3) + 7$

4 **[a] If $x = \frac{3}{4}$, $y = -\frac{5}{2}$, find the numerical value of : $(x - y) \div (x + y)$**

[b] Divide : $6x^2 - xy - 15y^2$ by $2x + 3y$ where $(2x + 3y) \neq 0$

[c] Add : $3a^2 + 2a + 5$ and $2a^2 - 5a + 3$

---

5 **[a] Factorize by identifying the H.C.F. : $12xy^3 + 18xy^2$**

[b] Find four rational numbers between : zero and $\frac{1}{2}$

[c] The following table shows Gehad's marks of mathematics in 6 months :

Months	October	November	December	February	March	April
Marks	31	35	42	36	46	50

Find : [1] The arithmetic mean. **[2] The median.**

14 El-Menia Governorate

Meghagha Educational Directorate
St. Mark • El Tawfik Schools

Answer the following questions :

1 **Choose the correct answer :**

[1] The number $\frac{x-3}{x+5}$ is a rational number if $x \neq$ .....

(a) 3 (b) -5 (c) 5 (d) -3

[2] The mode of the values : 3 , 3 , 4 , 4 , 5 , 3 is .....

(a) 4 (b) 22 (c) 5 (d) 3

[3] $\frac{3y}{5} - \frac{y}{5} =$ .....

(a) $\frac{2}{5}$ (b) $\frac{y}{5}$ (c) $\frac{2y}{5}$ (d) $2y$

[4] The algebraic expression : $x^3 - 3x^2 + 4$ is of the ..... degree.

(a) 1^{st} (b) 2^{nd} (c) 3^{rd} (d) 4^{th}

[5] If $\frac{15}{x} = \frac{-3}{4}$, then $x =$ .....

(a) -20 (b) -5 (c) 5 (d) 20

[6] $(x + y)(x - y) =$ .....

(a) $2x$ (b) $(x - y)^2$ (c) x^2 (d) $x^2 - y^2$

---

2 **Complete the following :**

[1] The mean of the numbers : 10 , 4 , 7 , 3 , 1 is .....

[2] If $(x - y)(3x + 2y) = 3x^2 + kxy - 2y^2$, then $k =$ .....

3 The coefficient of the algebraic term $(-5\,x\,y^2)$ is .....

4 The rational number which hasn't a multiplicative inverse is .....

5 If the order of the median of a set of values is fourth , then the number of these values is .....

3 **[a] Find three rational numbers lying between :** $\frac{1}{3}$ **and** $\frac{1}{2}$

[b] Simplify : $(2x+3)^2 - 12x$ **, then find the numerical value of the result at** $x = -2$

4 **[a] Using the distribution property , find the value of :** $\frac{3}{7} \times 10 + \frac{3}{7} \times 5 - \frac{3}{7}$

[b] Divide : $(x^2 + 6x + 5)$ **by** $(x+5)$ **where** $(x \neq -5)$

5 **[a] Factorize by taking out the H.C.F. :** $3\,m^4\,n^2 - 6\,m^3\,n^3 + 9\,m^2\,n^4$

[b] Subtract : $(-x^2 - 4x + 7)$ **from** $(x^2 - 4x - 2)$

[c] Find k if the arithmetic mean of the values : 27 , 8 , 16 , 24 , 6 , k is 14

Answer the following questions :

1 **Choose the correct answer :**

1 The algebraic term $6\,x^3\,y$ is of the ..... degree.

(a) first (b) fourth (c) sixth (d) fifth

2 The mode of the values : $7 , 5 , x+4 , 5 , 7$ is 5 , then $x =$ .....

(a) 1 (b) 4 (c) 5 (d) 7

3 If the rational number $\frac{x-2}{x+3} = 0$, then the value of $x =$ .....

(a) 1 (b) 2 (c) -2 (d) -3

4 The multiplicative inverse of the number $3\frac{2}{5}$ is .....

(a) $-3\frac{2}{5}$ (b) $3\frac{2}{5}$ (c) $\frac{17}{5}$ (d) $\frac{5}{17}$

5 Subtracting $-2x$ from $3x$ equals .....

(a) x (b) $-5x$ (c) $5x$ (d) $-6x^2$

6 $(3x+5)(x+2) = 3x^2 +$ ..... $+ 10$

(a) -7 (b) $11x$ (c) $5x$ (d) $7x$

2 Complete :

1. $5x^3y^3 \times \ldots\ldots = 15x^4y^5$
2. If $\frac{x}{y} = 1$, then $5x - 5y = \ldots\ldots$
3. $1\frac{2}{5} \times \ldots\ldots = 1$
4. The number that lies at half way between $\frac{1}{4}$ and $\frac{5}{8}$ is .....
5. The median for the values : 4 , 8 , 3 , 5 , 7 is .....

---

3 [a] Add : $3x - 2y + 5$ and $x + 2y - 2$

[b] Find three rational numbers that lie between : $\frac{1}{4}$ and $\frac{1}{2}$

---

4 [a] Use the distribution property to calculate :

$$\frac{7}{12} \times \frac{23}{45} + \frac{17}{12} \times \frac{23}{45} - 2 \times \frac{23}{45}$$

[b] Divide : $21x^2y - 7xy + 35xy^3$ by $7xy$

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5 [a] What is the increase of : $8x + 4y + 3z$ than $2x + 6y - z$?

[b] Simplify to the simplest form : $(5x-2)^2 - (5x-2)(5x+2) + 7$

[c] The following table shows Habiba's marks of mathematics in 6 months :

The month	Oct.	Nov.	Dec.	Feb.	March.	April
The mark	41	35	47	37	44	48

Find the arithmetic mean of the marks.